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10/524,143	02/11/2005	Volker Henninge	264612US0XPCT	2418
22850	7590	11/16/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.			RHEE, JANE J	
1940 DUKE STREET			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314			1795	
			NOTIFICATION DATE	DELIVERY MODE
			11/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/524,143

Applicant(s)

HENNINGE ET AL.

Examiner

Jane Rhee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 13-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I in the reply filed on 8/29/2007 is acknowledged. The traversal is on the ground(s) that examiner did not provide reasons for patentable distinction between the two groups.. This is not found persuasive because Group I lacks the special technical feature, "a suspension comprising oxide particles and at least one sol." Applicant further argues that lack of unity can only be between two independent claims and not between an independent claim and a dependent claim. MPEP 1800 states, the examiner should bear in mind that a claim may also contain a reference to another claim even if it is not a dependent claim as defined in PCT Rule 6.4. One example of this is a claim referring to a claim of a different category (for example, "Apparatus for carrying out the process of Claim 1 ...," or "Process for the manufacture of the product of Claim 1 ..."). Similarly, a claim to one part referring to another cooperating part, for example, "plug for cooperation with the socket of Claim 1 ...") *is not a dependent claim*. Group II claims a process for producing a separator of claims 1-12, therefore is not considered a dependent claim.

The requirement is still deemed proper and is therefore made FINAL.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

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F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-12,24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10504144 in view of Omae et al. (JP10326607).

Copending application '144 discloses a separator comprising a flexible nonwoven having a porous inorganic coating on and in the nonwoven, the material of the nonwoven being selected from nonwoven nonelectroconductive polymeric fibers, characterized by the nonwoven having a thickness of less than 30um and a porosity of more than 50% (claims 1 and 7). Copending application fail to disclose that the pores have a pore radius from 75-150um.

Omea et al. teaches a nonwoven separator with a pore radius of 75 um (paragraph 0006 from English translation) for the purpose of being excellent in solution retention and absorbency (paragraph 0004).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Copending application '144 with a

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pore radius of 75um in order to be excellent in solution retention and absorbency as taught by Omae et al.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6,9-12,24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yen (6495292) in view of Omae et al (JP10326607).

As to claim 1, Yen discloses separators comprising a flexible nonwoven (col. 2 line 17-30) having a porous inorganic coating on and in said nonwoven (col. 2 lines 50-56), and wherein the material of said nonwoven is selected from non-woven, nonelectroconductive polymeric fibers (col. 2 line 17-30), and wherein said nonwoven has a thickness of less than 30 .mu.m, (col. 3 line 67) a porosity of more than 50% (col. 2 line 67).

Yen fail to disclose a pore radius distributions in which at least 50% of the pores have a pore radius from 75 to 150 .mu.m.

Omae et al. teaches a nonwoven separator with a pore radius of 75 um (paragraph 0006 from English translation) for the purpose of being excellent in solution retention and absorbency (paragraph 0004).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Yen with a separator comprising a pore radius of 75um in order to be excellent in solution retention and absorbency as taught by Omae et al.

As to claim 2, Yen discloses wherein said separator is less than 35 .mu.m in Thickness (col. 3 line 67).

As to claim 3, Yen discloses wherein said polymeric fibers are selected from fibers of polyacrylonitrile, polyester, polyolefin or mixtures thereof (col. 2 line 50-56).

As to claim 4, Yen discloses wherein said polymeric fibers are from 0.1 to 10 .mu.m in diameter (col. 3 line 46-48).

As to claim 5, Yen discloses wherein said flexible nonwoven has a base weight of less than 20 g/m.sup.2 (col. 4 line 1).

As to claim 6, Yen discloses wherein said nonwoven is from 5 to 30 .mu.m in Thickness (col. 3 line 67).

As to claim 9, Yen discloses wherein said separator is from 30 to 80% in porosity (col. 2 line 67).

As to claim 10, wherein by said separator has a breaking strength of more than 1 N/cm, Yen teaches the nonwoven polyolefin separator as desired by the applicant therefore, it is inherent that the separator has a breaking strength of more than 1N/cm. .

As to claims 11-12, wherein said separator is bendable around a

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radius down to 100 mm without damage or around a radius down to 1 mm without damage, since Yen discloses the a nonwoven polyolefin separator as desired by the applicant it would be inherent that the separator is bendable around a radius down to 100 mm without damage or around a radius down to 1 mm without damage.

As to claim 24 wherein the use of the separator is a separator in lithium batteries is intended use. It has been held that a recitation with respect to the manner in which the claimed particle is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987)

As to claim 25, Yen discloses a battery comprising the separator discloses above (col. 1 line 11-12).

4. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yen in view of Omae et al. and in further view of Kung (5389471).

Yen discloses the separator disclosed above.

As to claim 7, Yen discloses wherein said porous inorganic coating present on and in said nonwoven comprises oxide particles of the elements Al, Si and/or Zr (col. 2 lines 50-53).

Yen fail to disclose the oxide partices having an average particle size from 0.5 to 7 .mu.m.

Kung teaches oxide partices having an average particle size from 0.5 to 7 .mu.m

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for the purpose of providing a separator that is excellent in tensile strength , wicking properties, wettability and alkali resistance (col. 2 lines 3-4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Yen with oxide partices having an average particle size from 0.5 to 7 μm in order to provide a separator that is excellent in tensile strength , wicking properties, wettability and alkali resistance (col. 2 lines 3-4) as taught by Kung.

As to claim 8, Yen discloses wherein said porous inorganic coating present on and in said nonwoven, comprises aluminum oxide particles which are adhered by an oxide of the elements Zr or Si (col. 2 lines 50-53).

Yen fail to disclose the oxide partices having an average particle size from 1 to 4 μm .

Kung teaches oxide partices having an average particle size of 1 μm for the purpose of providing a separator that is excellent in tensile strength , wicking properties, wettability and alkali resistance (col. 2 lines 3-4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Yen with oxide partices having an average particle size of 1 μm in order to provide a separator that is excellent in tensile strength , wicking properties, wettability and alkali resistance (col. 2 lines 3-4) as taught by Kung.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Rhee whose telephone number is 571-272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Jane Rhee', with a large, stylized initial 'J'.

Jane Rhee
September 27, 2007

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date
:6/4/07,5/16/06,6/21/05,3/24/05,2/11/05.